

WHAT IS CLAIMED IS:

1. An optoelectronic device for detecting labels with contrast patterns, said device comprising:

a transmitter that emits light rays, said transmitted light rays scanning the contrast patterns of the labels;

a receiver that receives light rays reflected by the labels and generates electrical receiving signals corresponding to the received light rays;

an evaluation device for evaluating the electrical receiving signals at the receiver; and

a deflection unit including a polygonal mirror wheel, and a motor that drives the polygonal mirror wheel, said transmitted light rays being guided over said polygonal mirror wheel to scan the contrast patterns of the labels and said received light rays being guided over said polygonal mirror wheel, wherein said motor has a shaft, an injected-molded magnet that is molded on said shaft and a coil, said coil being spaced from said magnet and said magnet operating jointly with said coil.

2. An optoelectronic device according to claim 1, further comprising a printed circuit board wherein said motor rests on said printed circuit board and said evaluation device is integrated into the printed circuit board.

3. An optoelectronic device according to claim 2, wherein said shaft rotates inside a bearing, said shaft being connected to said printed circuit board via said bearing.

4. An optoelectronic device according to claim 3, further comprising a tube that projects from the top of said printed circuit board wherein said bearing is positioned inside said tube.

5. An optoelectronic device according to claim 4, wherein said shaft has an upper portion and a lower portion, said bearing is provided with a bearing bore that extends in an axial direction, and the lower portion of said shaft is inserted in the bearing bore.

6. An optoelectronic device according to claim 5, wherein said magnet is formed onto the upper portion of said shaft, the upper portion of said shaft extending above said bearing.

7. An optoelectronic device according to claim 6, wherein a groove is provided in the upper portion of said shaft, said groove extending in a circumferential direction around said shaft, a portion of said injected-molded magnet extending into said groove.

8. An optoelectronic device according to claim 7, wherein said shaft has a longitudinal axis and the magnet is formed symmetrically about the longitudinal axis of said shaft, said magnet having a top surface and side surfaces where said polygonal mirror wheel is fitted onto the top surface and against the side surfaces of said magnet.

9. An optoelectronic device according to claim 1, wherein said polygonal mirror wheel comprises an injection-molded plastic part and mirror surfaces provided on a shell surface of the plastic part for deflecting the transmitted light rays and the received light rays.

10. An optoelectronic device according to claim 9, wherein said polygonal mirror wheel includes a circular disk segment and side walls that project downward from edges of the circular disk segment, said mirror surfaces being deposited on the side walls that project downward from segment edge.

11. An optoelectronic device according to claim 10, wherein the circular disk segment of said polygonal mirror wheel rests on a top surface of said magnet.

12. An optoelectronic device according to claim 8, wherein said polygonal mirror wheel is glued onto said magnet.

13. An optoelectronic device according to claim 8, wherein said magnet has a guide segment projecting from its top surface, said guide segment enclosing the upper portion of said shaft.

14. An optoelectronic device according to claim 13, wherein the upper portion of said shaft has a top surface and the guide segment has a top surfaces, the top surfaces of said shaft and said guide segment adjoining so that they are flush with one another.

15. An optoelectronic device according to claim 13, wherein said polygonal mirror wheel includes a circular disk segment and side walls that project downward from edges of the circular disk segment, the circular disk segment being provided with a central bore with circular cross-section, said guide segment being guided through the central bore.

16. An optoelectronic device according to claim 15, wherein the central bore of the circular disk segment fits flush against said guide segment.

17. An optoelectronic device according to claim 8, wherein said magnet has a lower edge that is positioned a distance from said coil, the lower edge of said magnet additionally being spaced from a portion of said tube that accommodates said bearing.

18. An optoelectronic device according to claim 17, wherein said magnet is provided with a central recess at its lower edge that is symmetrical to the longitudinal axis of said shaft, said tube projecting into the central recess.

19. An optoelectronic device according to claim 5, further comprising a housing with a bottom and a ceiling, wherein said transmitter, said receiver, said evaluation device and said deflection unit are surrounded by the housing, the combination of said printed circuit board and said motor resting on the housing bottom, and wherein the upper portion of said shaft has a top surface and the housing ceiling extends just above the top surface of said shaft.

20. An optoelectronic device according to claim 19, wherein said shaft is held inside said bearing and is displaceable in a longitudinal direction, the housing ceiling forming an end stop for said shaft.